

ABSTRACT OF THE DISCLOSURE

This disclosure provides a communications system using a span-loaded flying wing, traveling at relatively slow speeds, that can remain airborne for long periods of time. The communications system uses the airplane as a long term high altitude platform that can serve at least one of a number of potential functions. One function is to link to a ground station using radio wave signals and a satellite using optical signals. Another function is to serve as a relay station between ground communication nodes and individual end-users. Because the aircraft can tightly hold a station, the end-user's antennas do not need to be continuously adjustable. For such a system, a large number of aircraft can be used, with the end-user antennas being configured for a narrow beamwidth so as to allow frequency reuse for different communication links.